REMARKS

Claims 1-14 remain pending in the present application. Claims 8 and 9 have been amended to correct a typographical omissions. The amendments do not add new matter or raise new issues that would necessitate further prior art searches.

Claims 1-6, 8-9 and 11-14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Singh (WO 94/10533). In support of the rejection, the Examiner contends that "Singh discloses a sensitive layer which is depicted as element (22) in Figure 2, which sensitive layer is positioned on a support (12)," and that the "sensitive layer (22) in Singh includes glass or polymer particles on which an indicator dye is immobilized." However, the Examiner's interpretation is not only clearly contradicted by the actual disclosure of Singh, but the Examiner's interpretation of the Applicants' claims is unreasonable, for the reasons explained below.

Representative claim 1 recites, in relevant parts, "a sensitive layer positioned on the substrate, wherein . . . the sensitive layer is porous, and ***the sensitive layer contains particles*** that are optically transparent to the radiation emitted from the radiation source and that lengthen an optical path of the radiation." Independent claims 2, 3, 5, 12 and 13 recite similar limitations. Singh clearly indicates that element 22 is "the support matrix" (p. 8, line24), rather than "a sensitive layer" as asserted by the Examiner. To the extent the Examiner is contending that the matrix 22 and the indicators supported by the matrix 22 are equivalent to the claimed limitation that "**the sensitive layer contains particles**," this interpretation is clearly unreasonable, since the plain language of the claim and the related description in the specification clearly indicate that the **particles form the sensitive layer** (see, e.g., the Figure and p. 2, l. 30 - p. 3, l. 8). During examination, the claims must be given the broadest reasonable interpretation **consistent with the specification**. MPEP 2111. There is no reasonable interpretation of the claimed limitation "the sensitive layer contains particles" that would be consistent with the specification and still support the Examiner's interpretation. For these reasons, the anticipation rejection based on Singh is unwarranted.

Independent of the above, Applicants note that there is no clear indication in Fig. 2 of Singh that element 22 is "positioned on support (12)" as asserted by the Examiner,

since Fig. 2 only shows a two-dimensional top view of the support matrix 22 straddling the body 14, and it is simply unclear from Fig. 2 of Singh whether the support matrix 22 is actually positioned on the element 12. Indeed, since Singh clearly indicates that element 12 is an optical fiber, it is a strained interpretation to assert that optical fiber 12 of Singh is equivalent to the claimed "substrate," let alone assert that the support matrix 22 is somehow positioned on the optical fiber 12.

For the foregoing reasons, Applicants respectfully submit that the anticipation rejection of claims 1-6, 8-9 and 11-14 based on Singh should be withdrawn.

Regarding claim 3, the Examiner contends that page 3 of Singh discloses "the alternative use of PMMA in forming the solid surface support particles onto which the indicator dye is immobilized," and "Singh in fact teaches the use of polymers such as PMMA as an alternative to the glass or silica based particle materials described in the same paragraph on page 3." Applicants note that the Examiner's assertions regarding claim 3 are premised on the erroneous interpretation of parent claim 1 discussed previously, i.e., the incorrect interpretation made by the Examiner that the matrix 22 and the indicators supported by the matrix 22 are equivalent to the claimed limitation that "**the sensitive layer contains particles**," rather than the correct interpretation that the **particles form the sensitive layer**. As noted by the Examiner, Singh merely indicates "the alternative use of PMMA in forming the **solid surface support** . . . onto which the indicator dye is immobilized," rather than teaching the claimed limitation that the **sensitive layer particles** include one of a quartz and a PMMA. For these additional reasons, claim 3 is allowable over Singh.

Regarding claim 5, the Examiner contends that the term "hollow" should be defined as "an unfilled space: CAVITY, HOLE," and "having a cavity within." The Examiner further contends that "[t]he particles of Singh are porous and thus filled with internal voids," and that "[s]uch voids would either independently or collectively have constituted a 'cavity within' and therefore rendered the particles as hollow." However, Applicants once again note that the Examiner's assertions regarding claim 5 are premised on the erroneous interpretation of parent claim 1 discussed previously, i.e., the incorrect interpretation made by the Examiner that the matrix 22 and the indicators supported by the matrix 22 are equivalent to the claimed

limitation that "**the sensitive layer contains particles**," rather than the correct interpretation that the **particles form the sensitive layer**. As discussed in connection with claim 1, the porous particles of Singh cited by the Examiner clearly do not form the sensitive layer, and nothing in Singh teaches the limitation of claim 5 that the **sensitive layer particles** are hollow. For these additional reasons, claim 5 is allowable over Singh.

Regarding claim 12, the Examiner contends that the claimed limitation that the "substrate includes a detector" requires "no more than a functional association, or at most a physical association," and that "[t]he detector either implicitly disclosed by Singh or explicitly incorporated by Singh was clearly connected, both optically and physically with the fiber optic substrate." Applicants respectfully traverses the Examiner's interpretation of claim 12 since such interpretation clearly contradicts the reasonable interpretation that is consistent with the plain meaning of the phrase, the Applicants' specification and the interpretation that those skilled in the art would reach. MPEP 2111 and 2111.01. It is quite clear, particularly when read in light of the specification, that the phrase "substrate includes a detector" requires the detector to be **a part of the substrate**, not merely that the detector is connected to the substrate. For these additional reasons, claim 12 is allowable over Singh.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Singh. Applicants submit that claim 10, which ultimately depends on claim 1, is patentable over Singh for at least the same reasons given in support of the patentability of claim 1.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Singh in view of United States Patent No. 5,511,547 to Markle et al. ("Markle"). Since claim 7 ultimately depends on claim 1, and since Markle does not overcome the deficiencies noted above with respect to Singh, Applicants submit that claim 7 is patentable over Singh for at least the same reasons given in support of the patentability of claim 1.

Regarding claim 14, Applicants note that the sensitive material disclosed in Singh (in contrast to the support matrix of Singh, on which the Examiner bases his anticipation argument) is water-soluble. For at least this reason, claim 14 is allowable over Singh.

CONCLUSION

Applicants respectfully submit that all of the pending claims of the present application are now in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully submitted,

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